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FEED STUFF ANALYSES

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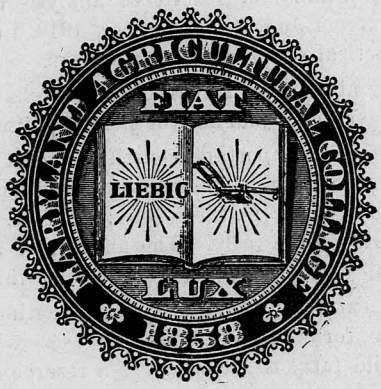

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ADDRESS

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College Park, Md.

ANALYSES OF

Commercial Feeding Stuffs Sold in Maryland

BY THE CHEMICAL DEPARTMENT OF

The Maryland Agricultural College

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This bulletin contains the results of analysis of feeding stuffs made in this laboratory from June to November, 1910, inclusive. The arrangement is in alphabetical order of manufacturers.

To the usual analysis for Protein and Fat we have added that of Fiber, as the latter is of value in judging the purity of the feed.

Protein is the most important constituent of the feed, and the most expensive. It is absolutely necessary to the animal to build and repair muscle, nerve, sinew, hair, feathers, etc.; in fact, enters into the composition of all parts of the body. The amount of protein is obtained by finding the amount of nitrogen and multiplying this by 6¼.

Fat, or ether extract, is obtained by extracting a small part of the sample with ether for sixteen hours. Fat serves as a fuel or energy producer, or to build fatty tissue which is a reserve supply for the animal. Starch and sugar serve the same purpose, but are less than half as efficient. Protein can also serve as an energy and fat-producer, but its main function should be as a tissue builder.

Fiber is the indigestible part of the feed and, from the commercial standpoint, has little value as feed. Hulls, straw, etc., are high in fiber so that the amount of fiber serves as an index of the amount of contamination with such materials. In the case of any given feed, as cotton-seed meal, a low protein content will be accompanied with a corresponding high fiber content, caused by the added hulls.

It should be remembered that in coarse materials which are neecssarily low in protein—as straw, oat hulls, peanut hulls, etc.—a smaller percentage of the protein present is digestible than in the case of high-grade feeds.

This department wishes to have the co-operation of feeders and dealers in the inspection of concentrated feeds and will be glad to analyze samples, provided samples of the same feeds have not been recently analyzed in the department. Before sending samples write for blanks and instructions. We will not analyze samples of medicines, "condition powders," condimental feeds, or the so-called "feeds" that are "five feeds for a cent" to be mixed with the regular feeds. Careful experiments at a number of the experiment stations have proved that these medicinal "feeds" are of no practical value.

The examination of the common feeds, as bran, middlings, corn meal, etc., will generally be limited to a microscopical examination for adulteration, as the slight variation in the chemical composition of the pure articles will not justify the expense of making a regular chemical analysis.

Concentrated feeding stuffs are generally by-products and the analysis of any one of them will vary some, depending on the method of preparation, etc.

The following should be the minimum analysis of the feeds named, and are given for comparison:

	PROTEIN.	FAT	CRUDE FIBER (Usual Limits.)
Cotton Seed Meal	40 Per Cent.	8 to 9 Per Cent.	6 to 8 Per Cent.
Linseed or Flax Seed Meal—Oil Cake Meal	35 "	7 "	8 to 9 "
Gluten Meal	33 to 36 "	2 "	1½ to 2½ "
Gluten Feed	25 "	3 "	7 to 9 "
Germ Oil Meal	23 "	10 "	
Malt Sprouts	23 "	1 to 2 "	12 to 14 "
Dried Brewers' Grains	20 "	3 "	10 to 12 "
Wheat Middlings	17 to 18 "	5 "	4 to 7 "
Wheat Bran	15 "	4 to 5 "	9 to 11 "
Ground Oats	11 to 12 "	4 to 5 "	8 to 11 "
Corn Meal	9 to 11 "	3 to 5 "	1 to 2½ "
Oat Straw	3 to 5 "	1 to 1½ "	35 to 40 "
Oat Hulls	3 to 4 "	1 to 1½ "	28 to 32 "
Corn Cobs	2 to 3 "	½ to 1 "	30 to 33 "
Meat and Bone Meal	40 "	10 "	½ to 1 "
Meat Meal	60 "	10 "	½ to 1 "

It should be remembered that the analysis does not indicate the palatability of the feed, or if it is musty, moldy or sour. These conditions are generally easily recognized by simple inspection—the appearance, odor, etc., or by the animals refusing the feed. Moldy corn is frequently kiln-dried and, while this prevents further growth of the mold, it does not restore the feed to prime condition. It is not relished by animals, and is unwholesome. It is false economy to use damaged feed, even if the feed is "cheap."

Analysis of Feeding Stuffs.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				FOUND.	Guaranteed.	FOUND.	Guaranteed.	FOUND.	Guaranteed.
20063	Ajax Milling & Feed Co., New York, N. Y.	Ajax Flakes.....	Cardiff.....	28.52	30.00	13.89	11.00	13.53	.....
20070	American Maize Products Co., New York, N. Y.	Cream of Corn Gluten Feed.	Baltimore.....	24.04	23.00	3.94	2.50	7.16	6.50
20042	American Milling Co., Chicago, Ill.	Sucrene Dairy Feed....	Baltimore.....	16.52	16.50	4.81	3.50	12.70	12.00
20064	" " " "	Sucrene Horse & Mule Feed.	Elkton	12.11	10.00	4.39	3.50	10.81	12.00
20052	" " " "	Sucrene Stock Feed....	Hagerstown...	10.97	10.00	3.71	3.50	8.94	13.50
20077	Anheuser-Busch Brewing Co., St. Louis, Mo.	Anheuser-Busch Brewers Grains.	Annapolis	27.12	24.00	8.08	7.50	13.54	12.00
20038	Atlantic Export Co., Chicago, Ill.	Dried Brewers Grains..	Baltimore.....	26.41	27.00	7.35	7.00	13.94	12.00
20093	J. W. Biles Co., Cincinnati, Ohio.	Union Grains Biles, Ready Dairy Ration.	College Park..	24.83	24.00	7.64	7.00	9.35	9.00
20092	Blatchford Calf Meal Factory, Waukegan, Ill.	Calf Meal.....	College Park..	25.27	25.00	5.30	5.00	7.08	.....
20036	J. Bolgiano & Son, Baltimore, Md.	Square Deal Chick Feed	Baltimore.....	8.78	10.01	2.66	3.89	2.31	.....
20037	" " " "	Square Deal Poultry Food.	Baltimore.....	8.95	11.50	3.96	3.87	2.46	.....
20086	F. W. Brode & Co., Memphis, Tenn.	Owl Brand Pure Cotton Seed Meal.	Providence....	40.10	41.00	9.50	6.00	7.90	10.00
20043	Buckeye Cotton Oil Co., Cincinnati, Ohio.	Buckeye Prime Cotton Seed Meal.	Baltimore.....	38.26	39.00	7.02	6.50	9.82	8.00
20044	J. J. Buffington & Co.. Baltimore, Md.	Pride Brand Poultry.... Feed Chick Size	Baltimore....	8.07	10.00	2.17	3.50	1.33	2.50
20045	" " " "	Pride Brand Poultry.... Feed Scratching Size	Baltimore.....	6.93	10.00	2.62	3.50	2.07	2.50
20067	Cyphers-Incubator Co., Buffalo, N. Y.	Developing Food.....	Baltimore.....	10.00	10.30	3.06	4.00	1.89	.....
20068	" " " "	Forcing Food.....	Baltimore....	11.14	12.69	3.08	3.80	2.44	.....
20069	" " " "	Laying Food.....	Baltimore.....	15.45	17.31	3.88	3.80	4.76	.....
20047	" " " "	Scratching Food.....	Baltimore.....	10.62	10.03	3.04	3.06	2.59	.....
20090	DeSoto Oil Co., Greenville, Miss.	Cotton Seed Meal.	Baltimore....	38.88	38.60	7.56	7.00	9.67	.....
20053	Jonas F. Eby & Son, Lancaster, Pa.	Crystaloid Dairy Feed..	Frederick	15.36	16.50	4.56	3.50	11.71	12.00
20065	John W. Eshelman, Lancaster,	Poultry Meat	Providence	62.75	50.00	11.83	13.00	.91	1.00

20069	" " " "	Laying Food.....	Baltimore.....	15.45	17.31	3.88	3.80	4.76	.....
20047	" " " "	Scratching Food.....	Baltimore.....	10.62	10.03	3.04	3.06	2.59	.....
20096	DeSoto Oil Co., Greenville, Miss.	Cotton Seed Meal.....	Baltimore....	38.38	38.60	7.58	7.60	3.67	.....
20053	Jonas F. Eby & Son, Lancaster, Pa.	Crystaloid Dairy Feed..	Frederick.....	15.36	16.50	4.56	3.50	11.71	12.00
20065	John W. Eshelman, Lancaster, Pa.	Poultry Meat.....	Providence....	62.75	50.00	11.83	13.00	.64	1.00
20089	J. M. Frisch & Co., Baltimore, Md.	Prime Cotton Seed Meal	Baltimore.....	41.33	39.00	7.52	7.00	8.31	.....
20075	" " " "	Pure Old Process Oil Meal.	Baltimore.....	36.59	32.00	6.29	5.00	6.90	5.00
20078	" " " "	King, Corn & Oats.....	Annapolis.....	8.04	8.00	4.05	4.00	9.55	.....
20057	J. J. George & Co., Baltimore, Md.	Chick Feed.....	Baltimore.....	9.92	11.23	2.35	3.09	1.97	1.49
20051	" " " "	Poultry Feed.....	Baltimore.....	8.95	11.23	3.28	3.09	2.86	1.49
20066	Great Western Cereal Co., Chicago, Ill.	Boss Chop Feed.....	Fallston.....	8.86	8.00	4.56	3.50	9.09	.....
20091	" " " "	Sterling Chick Feed.. .	Annapolis.....	10.09	10.00	2.47	3.00	2.38	4.00
20079	" " " "	Sterling Scratch Feed.	Annapolis.....	10.53	10.00	3.46	3.00	2.43	4.00
20030	Kratz & Matthews, Baltimore, Md.	Faultless Brand Chick Feed.	Baltimore....	7.46	9.86	.97	3.94	1.63	1.32
20031	" " " "	Faultless Brand Chick Starter.	Baltimore.....	8.42	9.30	3.63	4.22	1.18	1.76
20058	" " " "	Faultless Poultry Feed, Chick Size.	Baltimore.....	9.30	10.00	2.57	3.50	1.33	2.00
20059	" " " "	Faultless Poultry Feed Scratching Size.	Baltimore.....	9.04	10.00	3.05	3.50	1.98	2.00
20032	" " " "	Pigeon Feed.....	Baltimore.....	8.86	10.06	3.14	4.20	1.45	1.52
20050	Chas. A. Krause Milling Co., Milwaukee, Wis.	Badger Dairy Feed.....	Baltimore.....	16.15	16.00	2.23	2.00	12.73	20.00
20083	Larrowe Milling Co., Detroit, Mich.	Dried Beet Pulp.....	Baltimore.....	11.23	8.00	1.71	.50	15.62	17.50
20048	Guy G. Major Co., Toledo, Ohio.	Old Process Oil Meal....	Baltimore.....	31.68	31.50	6.18	7.00	7.96	10.00
20056	Memphis Cottonseed Products Co., Memphis, Tenn.	Cotton Seed Meal.....	Westminster..	39.40	39.00	7.43	6.00	10.30	10.00
20035	North-West Mills Co., Winona, Minn.	Sugarota Dairy Feed...	Jefferson.....	14.57	16.00	5.07	3.00	16.33	.....
20088	Quaker Oats Co., Chicago, Ill	Calf Meal.....	Providence...	19.31	19.00	9.02	8.00	3.04	.....
20076	" " " "	Schumacher Special Horse Feed.	Baltimore.....	9.65	9.25	3.04	3.50	6.08	.....
20080	Quaker Oats Co , Chicago, Ill.	Schumacher Stock Feed	Annapolis.....	9.83	10.00	4.28	3.25	10.77	10.00
20071	Ralston Purina Co., St. Louis, Mo..	Purina Chicken Chowder	Baltimore.....	20.80	16.00	3.36	2.50	7.94	11.50

Analysis of Feeding Stuffs.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				FOUND.	Guaranteed.	FOUND.	Guaranteed.	FOUND.	Guaranteed.
20040	Ralston Purina Co., St. Louis, Mo.	Protena Dairy Feed....	Baltimore.....	19.83	20.00	4.77	3.50	18.30	.....
20072	" " " "	Purina Feed.....	Baltimore.....	12.46	12.50	3.81	4.00	9.22	8.00
20046	" " " "	Purina Mill Feed Scratch Size	Baltimore....	11.14	11.00	3.68	3.60	2.83	4.00
20049	Wm. G. Scarlett & Co., Baltimore, Md.	Oriole Brand Poultry Mash.	Baltimore.....	15.53	15.00	3.72	3.20	9.44	11.00
20085	" " " "	Oriole Brand H. G. Poultry Feed.	Baltimore. ...	11.32	11.67	4.80	3.37	4.29	4.50
20073	C. S. Schermerhorn & Son, Baltimore, Md.	Prime Cotton Seed Meal.	Baltimore.....	37.21	38.62	7.79	6.00	11.77	12.00
20081	" " " "	Prime Cotton Seed Meal.	Baltimore.....	36.77	38.62	8.05	6.00	10.22	12.00
20060	W. A. Simpson & Co., Baltimore, Md.	Champion Brand Dairy Feed.	Baltimore. ...	12.29	11.36	4.01	3.07	14.38	.....
20061	" " " "	Champion Brand Horse & Mule Feed.	Baltimore. ...	12.20	11.13	3.84	3.16	13.96	.....
20062	" " " "	Champion Brand Poultry Mash.	Baltimore.....	13.60	13.12	4.03	4.09	13.92	.....
20039	" " " "	Champion Brand Scratch Feed.	Baltimore.....	8.07	9.06	3.03	3.81	1.79	1.13
20034	" " " "	Purity Brand Scratch Feed	Baltimore.....	7.72	9.06	2.95	3.84	1.93	1.13
20074	Southern Fibre Co., Portsmouth, Va.	Cotton Seed Feed Meal.	Baltimore.....	19.98	22.00	4.21	4.00	22.30	22.00
20094	Suffern, Hunt & Co., Decatur, Ill.	Acme Hominy Feed....	College Park..	9.48	9.30	8.49	7.10	5.96	10.00
20087	Sugarine Dairy Co., Chicago, Ill.	Sugarine Dairy Feed...	Colora	16.06	16.50	4.89	3.50	11.27	12.00
20084	Toledo Grain & Milling Co., Toledo, O.	Corn & Oats Chop.....	Baltimore.....	9.39	10.00	3.74	4.00	3.21	6.00
20082	Van Iderstine Co., Long Island City, N. Y.	Darling's Pure Ground Beef Scrap.	Baltimore.....	60.29	55.00	10.53	5.00	1.48	3.00
20054	Western Grain Products Co., Hammond, Ind.	Hammond Dairy Feed..	Frederick	15.88	17.00	3.72	3.00	10.86	.....
20041	Rob't. A. Wooldridge Co., Baltimore, Md.	Beef Scrap for Poultry..	Baltimore.....	65.38	.....	12.28	.....	.61	. ....

FEED STUFF LAW OF MARYLAND

(Approved April 5, 1900)

SECTION 1. Be it enacted by the General Assembly of Maryland, That the following new Sections be added to Article 48 of the Code of Public General Laws, title "Inspections," under the new sub-title, "Feed Stuffs," to follow Section 83, and to be known as Sections 84, 85, 86, 87, 88, 89, 90, 91 and 92, and to read as follows:

84. Every manufacturer, company or person who shall sell, offer or expose for sale or for distribution in this State any concentrated commercial feeding stuff as defined in the following section of this sub-title, used for feeding farm live stock and poultry, shall affix to every package of such feeding stuff, in a conspicuous place, on the outside thereof, a plainly printed statement, clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trade-mark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, the source of the food principles, and a chemical analysis stating the percentage of crude protein, allowing one per cent. of nitrogen to equal six and one-fourth of protein, and of crude fat it contains, both constituents to be determined by the method adopted, at the time, by the Association of Official Agricultural Chemists.

85. The term concentrated commercial feeding stuff, as here used, shall not include hays and straws, the whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn. Neither shall it include wheat, rye and buckwheat brans or middlings, not mixed with other substance, but sold separately, as distinct articles of commerce, nor pure grain ground together. The agent of the State hereinafter authorized to make those inspections, is fully empowered to take samples of these excepted articles when found, and, if upon analysis, they prove to be adulterated, the vender shall be in all respects subject to the penalties hereinafter set forth for the adulteration of concentrated commercial feeding stuff.

86. The term concentrated commercial feeding stuff, as here used, shall include linseed meals, cotton-seed meals, cotton-seed hulls, pea meals, cocoanut meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewer's grains, malt sprouts, hominy feeds, cereline feeds, rice meals, oats feeds, corn and oat chops, ground beef, fish or animal meals, mixed feeds, all patented or trade-marked foods and all other materials of similar nature not included within the preceding Section of this sub-title.

87. Before any manufacturer, company or person shall sell, offer or expose for sale in this State any concentrated commercial feeding stuff, as defined in the preceding Section of this sub-title, he or they shall for each and every feeding stuff bearing a distinguishing name or trade-mark, file with the State Chemist of the Maryland Agricultural College, a certified copy of the statement named in Section 84 of this sub-title; said certified copy to be accompanied, when the State Chemist shall so request, by a sealed package containing at least one pound of the feeding stuff to be sold or offered for sale, and the company or person furnishing said sample shall thereupon make affidavit that said samples correspond within reasonable limits to the feeding stuff which it represents in the percentage of protein and fat which it contains.

88. Before any concentrated commercial feeding stuff, as defined in Section eighty-six of this Act is sold, offered or exposed for sale in this State,

20041 | Hammond, Ind. Rob't. A. Wooldridge Co., Baltimore, Md. | Beef Scrap for Poultry.. | Baltimore ..... | 65.38 | ..... | 12.28 | ..... | .61 | .....

the manufacturer, importer, agent or seller thereof shall pay to the Treasurer of the Maryland Agricultural College an inspection fee of twenty dollars for each brand or kind of concentrated commercial feeding stuff contemplated to be sold, and shall receive therefor from said treasurer a license to sell such brand of concentrated commercial feeding stuff until the first day of July next following; provided that when any manufacturer, importer or dealer shall have paid the inspection fee as herein provided, it shall not be necessary for any other person, as his agent or representative, to pay said fee.

89. Any manufacturer, importer or person who shall sell, offer or expose for sale or for distribution in this State any concentrated commercial feeding stuff, as defined in Section 86 of this Act without complying with the requirements of the preceding sections of this sub-title, or any feeding stuff which contains substantially a smaller percentage of constituents, than are certified to be contained shall, on conviction in a court of competent jurisdiction, be fined not more than one hundred dollars for the first offense, and not more than two hundred dollars for each subsequent offense.

90. The State Chemist of the Maryland Agricultural College shall annually analyze, or cause to be analyzed, at least one sample (to be taken in the manner hereinafter prescribed) of every concentrated feeding stuff sold or offered for sale under the provisions of this sub-title; said State Chemist is hereby authorized and directed in person, or by deputy, to take a sample, not exceeding two pounds in weight, for said analysis, from any lot or package of concentrated commercial feeding stuff, which may be in the possession of any manufacturer, importer, agent or dealer, or in *transitu* in this State. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

91. Any person who shall obstruct the State Chemist or his deputy when in the discharge of his duty, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine of not less than one hundred ($100) dollars, or more than five hunderd ($500) dollars, or by imprisonment for not less than one month or more than six months, or by both such fine and imprisonment.

92. Whenever the State Chemist becomes cognizant of the violation of any of the provisions of this sub-title he shall report such violation to the State's Attorney having jurisdiction, who shall prosecute the party or parties thus reported, but it shall be the duty of said State Chemist to notify the manufacturer, importer or dealer in writing, before reporting same to State's Attorney, and give him not less than thirty days thereafter in which to comply with the requirements of this sub-title, but there shall be no prosecution in relation to the quality of any concentrated commercial feeding stuff if the same shall be found substantially equivalent to the certified statement named in Section 87 of this sub-title.